ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Department for Natural Resources

Division of Oil and Gas Conservation

(Amendment After Comments)

805 KAR 1:110. Underground injection control.

RELATES TO: KRS **353.180(3), 353.510, 353.520, 353.550, 353.570(1), (2), 353.590, 353.992, 40 C.F.R. 146.6, 42 U.S.C. 300j-6 [~~353.520~~]**

STATUTORY AUTHORITY: KRS 353.540, 353.550, 353.560, 353.592

NECESSITY, FUNCTION, AND CONFORMITY: KRS 353.540 authorizes the Department of Mines and Minerals to administer and enforce the provisions of KRS 353.500 to 353.720. The waste of oil and gas is prohibited by KRS 353.520, which provides that **[~~such~~]** prohibited waste includes the unreasonable damage to underground **[~~,~~]** fresh or mineral water supply, workable coal seams, or other mineral deposits in the operations for the discovery, development, production, or handling of oil and gas**;** **[~~,~~]** the unnecessary or excessive surface loss or destruction of oil or gas or their constituents**;** and the drowning with water of any stratum or part thereof capable of providing oil or gas in paying quantities, except for secondary recovery purposes, or in hydraulic fracturing or other completion practices. **[~~Further,~~]** KRS 353.592 authorizes the department to develop a regulatory program for the purpose of accepting primary responsibility for the administration of the Underground Injection Control Program. **[~~Therefore, it is the purpose of~~]** this administrative regulation **establishes requirements for [~~to regulate~~]** the drilling, casing, operation, plugging, construction, conversion, and maintenance of Class II wells and **the protection of** [~~It is the~~

~~purpose of this administrative regulation~~] **[~~to protect~~]** fresh water zones from contamination associated with the production of oil and gas.

Section 1. Definitions. The definitions contained in KRS 353.510 and the following additional definitions shall apply to this administrative regulation:

(1) "Administrator" means the regional administrator for Region IV of U.S. EPA.

(2) **"Aquifer" means an underground geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.**

(3)"Area of review" means that area within not less than a fixed radius of one-fourth (1/4) mile around an injection well**, except that [~~: provided, however, that~~]** at the option of the permit applicant, the area of review may be deemed to be the zone of endangering influence calculated in accordance with 40 C.F.R. **146.6 [~~146.06~~]**.

[~~(3) "Aquifer" means an underground geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.~~]

(4) "Casing" means a pipe or tubing of appropriate material, of varying diameter and weight, lowered into a borehole during or after drilling in order to support the sides of the hole and **[~~thus~~]** prevent the walls from caving, to prevent loss of drilling mud or fluids into porous ground**[~~,~~]** or to prevent water, gas, or other fluid from entering or leaving the hole.

(5) "Cementing" means the operation **in which [~~whereby~~]** a cement slurry is displaced around the casing's annulus using approved engineering methods.

(6) "Class II well" means a well which injects fluids**: [~~,~~]**

(a) Which are brought to the surface in connection with natural gas storage operations, or conventional oil or natural gas production and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste when injected;

(b) For enhanced recovery of oil or natural gas; or

(c) For storage of hydrocarbons which are liquid at standard temperature and pressure.

[~~(a) Which are brought to the surface in connection with conventional oil , natural gas , or coalbed methane production and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection; or~~

~~(b) For enhanced recovery of oil or natural gas; or~~

~~(c) For storage of hydrocarbons which are liquid at standard temperature and pressure.~~]

(7) "Commercially producible" means a well which **may [~~can~~]** be used commercially for the production of oil and gas **[~~,~~]** or for Class II injection.

(8) **[~~"Confining bed" means a body of impermeable or distinctly less permeable material stratigraphically adjacent to one or more aquifers.~~**

~~(9)~~] "Confining zone" means a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement above an injection zone.

(9) [~~(10)~~] "Contaminant" means any physical, chemical, biological, or radiological substance or matter in water.

(10) [~~(11)~~] "Date of primacy" means the effective date of the Administrator's approval of Kentucky's Underground Injection Control (UIC) Program [~~;~~] made pursuant to Section 1425 of the Safe Drinking Water Act **as codified in 42 U.S.C. 300h-4**.

[~~(12) "Department" means the Kentucky Department for Natural Resources.~~

~~(13)"Director" means the Director of the Kentucky Division of Oil and Gas Conservation.~~]

(11)[~~(14)~~] "Division" means the Kentucky Division of Oil and Gas Conservation.

(12) **"Endangerment"** [~~(15)"Endanger"~~] means that an injection operation may result in the presence of a contaminant in ground water, which supplies or **may** [~~can~~] reasonably be expected to supply any public water system, and that the presence of that contaminant, or any contaminant, may result in **violation of** [~~such system not complying with~~] any national primary drinking water regulation or may otherwise adversely affect the health of persons.

(13) [~~(16)~~] "EPA" means the United States Environmental Protection Agency.

(14) "Flow rate" means the volume per time unit given to the flow of gases or other fluid substance which emerges from an orifice, pump, or turbine or passes along a conduit or channel.

(15) "Fluid" means any material or substance which flows or moves whether in a semi-solid, liquid, sludge, gas, or other form or state.

(16) [~~(17)~~] "Formation breakdown pressure" means indicated values from data recorded prior to and during squeeze cementing, acidizing, or hydraulic fracturing treatments performed by appropriate service companies. These breakdown pressure values are frequently reported as the surface gauge pressure which shall, through appropriate engineering calculations, be

modified to reflect the pressure at which an exposed formation fractures and allows fluid to be injected into the formation.

(17) [~~(18)~~] **[~~"Formation fluid" means fluid present in a formation under natural conditions as opposed to introduced fluids, such as drilling mud.~~**

~~(19) "Flow rate" means the volume per time unit given to the flow of gases or other fluid substance which emerges from an orifice, pump, turbine, or passes along a conduit, or channel.~~

~~(20) "Fluid" means any material or substance which flows or moves whether in a semi-solid, liquid, sludge, gas, or other form or state.~~

~~(21)~~] "Freshwater" **means [~~is defined as~~]** an underground source of drinking water **[~~(USDW)~~]**.

(18) [~~(22)~~] "Freshwater zone" means underground source of drinking water.

(19) [~~(23)~~] "Ground water" means water below the land surface in an aquifer's zone of saturation.

(20) [~~(24)~~] "Injection well' means a well into which fluids are being injected.

(21) [~~(25) "Instantaneous Shut-In Pressure" (ISIP) means the pressure observed (recorded) at the wellhead immediately after the fracturing treatment. ISIP is that static pressure required to hold a fracture open, to inject fluids into an established fracture system under dynamic conditions if there were no pipe or perforation frictional pressure losses influencing the observed (recorded) surface pressure.~~

~~(26)~~] "Injection zone" means a geological formation, group of formations, or part of formation receiving fluids through a well.

(22) [~~(27) "Lithology" means the description of rocks on the basis of their physical and chemical characteristics.~~

~~(28)~~] "Mechanical integrity" means a condition of injection wells which exists if there is **not [~~no~~]** leakage in the well's casing, tubing, or packer and **if there is not [~~no~~]** fluid movement into an underground source of drinking water through vertical channels adjacent to the well bore.

(23) [~~(29)~~] "Owner or operator" means the company or **person having [~~person(s) which have~~]** secured a permit **for:**

(a) A new or converted well; or

(b) A rule authorized well in operation prior to the effective date of primacy, as defined in subsection (10) of this section. [~~from the division and responsible for any facility or activity.~~]

(24) [~~(30)~~] "Packer" means a device lowered into a well to produce fluid--tight seal.

(25) [~~(31)~~] "Plugging" means the act or process of stopping the flow of water, oil or gas into or out of a formation through a borehole or well penetrating that formation by the placement of cement plugs in the wellbore.

(26) [~~(32)~~] "Project" means a group of wells in a single operation.

(27) [~~(33)~~] "Public water system" means a system for the provision to the public of piped water for human consumption, if **the [~~such~~]** system has at least fifteen (15) service connections or regularly serves at least twenty-five (25) individuals.

(28) [~~(34) "Site" means the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.~~

~~(35) "Step-rate" means water or other fluid injection type testing performed specifically to determine the formation breakdown pressure of the injection zone prior to the initiation of the enhanced recovery project.~~

~~(36) "Stratum" means a single sedimentary bed or layer, regardless of thickness that consists of generally the same kind of rock material.~~

~~(37) "Surface casing" means the first string of well casing to be installed in the well to protect freshwater zones and provides support for deeper casing strings and rig stabilization.~~

~~(38)~~] "Underground source of drinking water **or "USDW"** [~~(USDW)~~]" means an aquifer or its portion**, which is not an exempted aquifer and which**:

(a)[~~1. Which~~] supplies any public water system; or

(b) [~~2. Which~~] contains a sufficient quantity of groundwater to supply a public system; and

1. [~~a.~~] Currently supplies drinking water for human consumption; or

2. [~~b.~~] Contains less [~~fewer~~] than 10,000 mg/l total dissolved solids [~~; and~~

~~(b) Which is not an exempted aquifer~~].

(29) "Well" means a borehole drilled, or proposed to be drilled, for the purpose of:

(a) Producing natural gas or petroleum, or one through which natural gas or petroleum is being produced; or

(b) Injecting water, gas, or other fluid or one into which water, gas, or other fluid is being produced.

[~~(2) "Aquifer" means geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.~~

~~(3) "Public water system" means a system for the provision to the public of piped water for human consumption, if such system has at least fifteen (15) service connections or regularly serves at least twenty-five (25) individuals.~~

~~(4) "Class II well" means a well which injects fluids:~~

~~(a) Which are brought to the surface in connection with conventional oil or natural gas production and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection; or~~

~~(b) For enhanced recovery of oil or natural gas; or~~

~~(c) For storage of hydrocarbons which are liquid at standard temperature and pressure.~~

~~(5) "New Class II well" means a Class II well on which drilling or conversion commenced later than thirty (30) days after the date of primacy.~~

~~(6) "Existing Class II well" means all Class II wells other than new Class II wells.~~

~~(7) "Date of primacy" means the effective date of the Administrator of the Environmental Protection Agency's approval of Kentucky's Underground Injection Control (UIC) Program, made pursuant to section 1425 of the Safe Drinking Water Act.~~

~~(8) "Area of review" means that area within not less than a fixed radius of one-fourth (1/4) mile around an injection well; provided, however, that at the option of the permit applicant, the area of review may be deemed to be the zone of endangering influence calculated in accordance with 40 CFR 146.06, which is adopted and incorporated herein by reference.~~

~~(9) "Endanger" means that an injection operation may result in the presence in underground water, which supplies or can reasonably be expected to supply any public water system, of any contaminant and that the presence of that contaminant may result in such system not complying~~

~~with any national primary drinking water regulation or may otherwise adversely affect the health of persons.~~

~~(10) "Freshwater" is defined as a USDW.~~

~~(11) "Project" means a group of wells in a single operation.]~~

Section 2. General. (1) **A person shall not** **[~~No person shall~~]** drill a Class II well without first obtaining a permit to drill pursuant to KRS 353.570(1) and (2).

(2) **A person shall not** **[~~No person shall~~]** inject fluids to the subsurface through a Class II well without the authorization of the division [~~director~~] **in[~~. Such authorization shall take~~]** the form of a permit issued pursuant to Section 11[~~8~~] of this administrative regulation [~~or of a permit by rule conferred in accordance with Section 4 of this administrative regulation~~].

(3) The owner or operator of a Class II well **shall** **[~~is required to~~]** maintain financial responsibility and resources to close, plug, and abandon the underground injection operation pursuant to the requirements in Section 8 of this administrative regulation [~~in a manner prescribed by the director~~].

(4) The fee requirements for an application to drill a new Class II injection well pursuant to KRS 353.590**(2)(a)** shall suffice for and be applicable to the permit to inject.

(5) The permit to operate any Class II well may be transferred to a successor only after notice is given to the **division** **[~~director~~] on the Well Transfer for UIC Wells, Form ED-26, and [~~. Such notice, filed on form ED-26, incorporated by reference,~~]** shall include at least the following:

(a) The original operator's company name and address**;[~~.~~]**

(b) The successor's company name and address**;[~~.~~]**

(c) The permit number of the well**;[~~.~~]**

(d) The Carter Coordinate location**;[.]**

(e) The farm name and well number**;[.]**

(f) Signatures of the original operator and the successor**[,]** or that of their official **representatives [~~representative(s)~~] ; and [.]**

(g) A statement that the successor assumes all responsibility for the well**[,]** and provides financial responsibility pursuant to Section 8 of this administrative regulation.

(6) [~~(h)~~] A Class II well with an outstanding noncompliance **shall [~~will~~]** not be transferred, unless the successor is willing to correct deficiencies **and submit, [~~and submits~~]** a corrective action plan which is approved by the division **pursuant to subsection (11) of this section**.

(7) A Class II well [~~(6)All Class II wells~~] shall be plugged in the manner established in 805 KAR 1:060 and 805 KAR 1:070, whichever is applicable.

(8) An injection permit shall not [~~(7) No injection permit shall~~] be issued unless the applicant demonstrates [~~An applicant for an injection permit shall be required to satisfy the director~~] that the Class II well will not **cause the endangerment of [~~endanger~~]** a USDW.

(9)(a) [~~(8)~~] [~~(8) No permit by rule shall be interpreted as authorizing injection through a Class II well which endangers a USDW.~~

~~(9)~~] If the **[~~division determines~~]** [~~director concludes~~] **[~~that~~]** casing and cementing of a Class II well [~~authorized by rule~~] is inadequate and **[~~that~~]** movement of fluids **cause the endangerment of a [~~endangers~~]** USDW, the division[~~. The director~~] shall require [~~an individual permit or notify~~] the owner or operator of **a [~~such~~]** well to take [~~of~~] necessary corrective action. [~~Any such~~]

(b) Corrective action shall [~~must~~] be completed within ninety (90) days [~~one (1) year~~] of notification from the division to the owner or operator.

(c) Injection shall not be **[~~No injection is~~]** authorized until the corrective action has been completed and **[~~a~~]** mechanical integrity **[~~test~~]** has been **demonstrated [~~conducted~~]**.

(10) (a) [~~(9)~~] [~~(10)~~] In administering and applying this administrative regulation, the division [~~director~~] shall, **as practicable** **[~~to the maximum practicable extent~~]**, take into account the varying geologic, hydrological, and historical conditions in different areas within the state.

(b) The division [~~director~~] may, **if** **[~~where~~]** consistent with other provisions of this section, upon **submittal of the Class II Well Permit Application for Underground Injection Control, Form ED-14** **[~~application~~]** and after notice and hearing, grant a variance from any requirement of **subsection (8) of this section** **[~~of this administrative regulation~~]** upon a **demonstration** **[~~showing~~]** that alternate prudent engineering practices will protect a USDW.

(11) The division may modify, suspend or revoke a Class II well permit if the injection operation is altered in a way that does not adequately protect the USDW or if a mechanical integrity failure or downhole condition compromises the injection system.

Section 3. Exempted Aquifers. An aquifer or a portion thereof which meets the criteria established in this section for a USDW may be determined by the division [~~director~~] to be an "exempted aquifer" if it meets the following criteria:

(1) It does not currently serve as a source of drinking water; and

(2) It cannot now and will not in the future serve as a source of drinking water because:

(a) It is mineral, hydrocarbon, or geothermal energy producing, or **may** **[~~can~~]** be demonstrated to contain minerals or hydrocarbons that, considering their quantity and location, are expected to be commercially producible;

(b) It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;

(c) It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or

[~~(d) It is located over a Class III mining area subject to subsidence or catastrophic collapse; or~~]

(d) **[~~(3)~~]** The total dissolved solids content of the groundwater is more than 3,000 mg/l and less than 10,000 mg/l, and it is not reasonably expected to supply a public water system.

Section 4. [~~Permit by Rule. (1) All existing Class II wells are granted a permit by rule and authorized to inject fluids to the subsurface provided that the owner or operator:~~

~~(a) Maintains compliance with all applicable requirements of Sections 5 and 7 of this administrative regulation; and~~

~~(b) Within one (1) year from the effective date of this administrative regulation, files an area plat or plats showing all of the Class II wells subject to the permit by rule. The plat(s) submitted must show the existing Class II wells and all lessors' and lessees' names and boundaries, and shall be prepared and certified as accurate and correct by a licensed Kentucky Land Surveyor.~~

~~(2) All new Class II wells, constructed as part of an existing injection project, may be operated by rule after the following information has been submitted to and approved by the director:~~

~~(a) The application to operate by rule shall be submitted on forms provided by the director and shall be identical to application forms used for new Class II wells (Section 8 of this administrative regulation).~~

~~(b) All the requirements of Section 8 of this administrative regulation shall apply except subsections (1)(c)7 and 8 and (3) of this section.~~

~~(c) The plat submitted with said application to inject into a new Class II well in an existing project shall satisfy the applicable requirements of Section 8 of this administrative regulation and~~

~~shall also show the proposed well location in the existing project, and that its location falls within an area having wells conforming to a geometric pattern already established.~~

~~(3) Injection of fluids to the subsurface shall not be made until a permit to inject is issued.~~

~~Section 5.~~] Requirements Applicable to **[~~All~~]** Class II Well Permits. Authorization to inject fluids through **a Class II well [~~all Class II wells~~]** [~~(whether by rule or by individual permit)~~] shall be conditioned upon compliance with the following requirements:

(1)**(a)** The owner or operator [~~permittee~~] shall promptly notify the director in writing of any modification in the manner in which the injection operation is conducted or of any mechanical failure or downhole problem encountered in the operation of the Class II **well [~~wells~~]** or upon recognition of a failure in an injection system.

(b) The [~~Said~~] well or wells which appear to be leaking shall be shut down immediately and correction procedures shall be initiated within fifteen (15) days, or the permit to inject may be revoked **under appropriate conditions**.

(c) The prescribed notice to the director shall describe all proposed modifications or corrective actions and shall be subject to the approval of the director.

(2) The owner or operator [~~permittee~~]shall afford the director, or his authorized representative(s) upon proper presentation of credentials, access to Class II wells and related facilities for the purpose of conducting inspections, witnessing mechanical integrity tests, corrective action operations and plugging procedures, and testing samples of injected fluids.

(3)**(a)** The owner or operator [~~permittee~~]shall regulate the injection pressure in **[~~such~~]** a manner **so** that the pressure in the injection zone does not initiate new fractures or propagate existing fractures in the confining zone **that [~~which~~]** would cause the movement of injected fluids into a USDW.

(b) The **division** **[~~director~~]** may, **if** **[~~when~~]** necessary to ensure [~~insure~~] compliance with this requirement, establish limitations on the wellhead pressure at which **a Class II well** **[~~Class II wells~~]** may be operated.

(c) Any **[~~such~~]** limitation shall be included as a permit condition or through an order issued after notice and opportunity for hearing.

(4)**(a)** The owner or operator [~~permittee~~] shall provide for the mechanical integrity of the well by operating without [~~significant~~] leaks in the casing, tubing, or packer and without [~~significant~~] fluid movement into a USDW through vertical channels adjacent to the well bore.

(b) The owner or operator [~~permittee~~] shall, upon request of the division [~~director~~], conduct tests of the mechanical integrity of the Class II **well** **[~~wells~~]**, utilizing a method approved by the division as required in Section 6 of this administrative regulation [~~director~~]. [~~Otherwise, tests shall, as nearly as practicable, be scheduled at five (5) year intervals and the permittee shall certify the test results to the director in writing within fifteen (15) days subsequent to the test.~~]

(c) Each Class II well shall be tested for mechanical integrity at least every five (5) years pursuant to Section 6(6) **of this administrative regulation**.

(d) An **[~~Any~~]** alternative mechanical integrity test authorized by the division **shall** **[~~must~~]** be approved by the administrator.

(5)**(a)** The owner or operator [~~permittee~~] shall monitor and record injection pressures rates and volumes at least monthly and shall submit on **the Annual Disposal or Injection Well Monitoring Report," Form ED-18** **[~~forms~~]** provided by the division [~~director~~], an annual report of the results of **[~~such~~]** monitoring to the division [~~director~~].

(b) The owner or operator [~~permittee~~] shall retain all **these** **[~~such~~]** records on file for a period of five (5) years.

(c) The owner or operator of hydrocarbon storage or enhanced recovery wells may monitor them by manifold monitoring on a field or project basis rather than on an individual well basis if **the** **[~~such~~]** facilities consist of more than one (1) injection well, **operated** **[~~operate~~]** with a common manifold, and provided the owner or operator demonstrates to the division [~~director~~] that manifold monitoring is equivalent [~~comparable~~] to individual well monitoring.

[~~(6) For purposes of this section, a permittee shall include the owner or operator of a well authorized by rule under Section 4 of this administrative regulation.~~]

Section 5. [~~6.~~] Construction Requirements for **[~~All~~]** [~~New~~] Class II Wells. (1) **(a) A** **[~~All~~]** [~~new~~] class II injection **well** **[~~wells~~]** proposed to be constructed after the effective date of primacy shall be constructed in accordance with applicable provisions of KRS 353.570(1) and (2) and 805 KAR 1:020 in a manner that **shall** **[~~will~~]** prevent injected fluids from escaping to a USDW.

(b) Existing Class II wells authorized **by** **[~~under~~]** EPA are exempt from this requirement unless the division determines that corrective action is necessary to prevent injected fluids from escaping to a USDW.

(c)1. A freshwater string of casing **shall** **[~~must~~]** extend fifty (50) feet below the freshwater depth stated on the permit or the base of the deepest fresh water, whichever is greater.

2. All freshwater casing strings shall have cement circulated to fill the annular space of [~~outside~~] **the casing.** **[~~said casing.~~]**

3. This **[~~Such~~]** casing shall be cemented, using approved engineering methods to assure the circulation [~~return~~] of the cement to the surface.

4. The long string of casing shall [~~must~~] extend at least from the surface to immediately above the injection interval, and **shall** **[~~must~~]** have a minimum of 300 feet of cement behind the lowermost 300 feet of casing.

5. If the fresh water is not protected by a separate string of casing, then the long string shall [~~must~~] be cemented with circulation of cement back to surface [~~from top to bottom~~].

(d) Tubing shall be installed in the casing with a packer set at a depth not to exceed fifty (50) feet above the injection zone.

(e) The owner or operator shall provide a detailed description of the casing plan on **the Casing and Cementing Plan for UIC Wells,** Form ED-25, **[~~incorporated herein by reference,~~]** and submitted with the **Class II Well Permit Application for Underground Injection Control, Form ED-14 [~~application~~]** for permit to inject.

(f) The casing plan shall be approved by the director and shall include a listing of the casing size, type, grade, depth of each casing string, and the class and volume of the cement to be used.

(2)**(a) An [~~Any~~]** active oil and gas well**[~~,~~]** or an abandoned or plugged well reopened for the purpose of conversion to a [~~new~~] Class II injection well, shall satisfy the requirements for cementing of [~~new~~] **a Class II well. [~~Class II wells.~~]**

(b) If perforation of existing casing is required to satisfy the [~~current~~] cementing requirements [~~administrative regulations~~] during the conversion of **the well [~~said well(s)~~]** to a [~~new~~] Class II well, a tubing and packer shall be installed in the existing casing to the area immediately above the injection interval, not to exceed fifty (50) [~~100~~] feet above **the [~~said~~]** injection interval.

(3) **A [~~All~~]** [~~new~~] Class II disposal **well [~~wells~~]** shall be designed to ensure [~~insure~~] that disposal zones are hydraulically isolated from USDW.

(4) The owner or operator shall provide the division with all required geophysical logs and **results of [~~other~~]** tests conducted during the drilling and completion of **a Class II well that [~~Class II wells which~~]** specifically relate to the **USDW, [~~USDW(s) and~~]** the confining zone adjacent to it, and the injection and adjacent formations, and shall include the following:

(a) A **geophysical log [~~log(s)~~]** marked to indicate all fresh water zones, the confining **zone [~~zone(s)~~]** and the injection interval;

(b) **A [a]** geologic description of the confining and injection **zone [~~zone(s)~~]** that shall include the lithologic description, geologic name, and thickness; **and**

(c)**1.** A report describing the nature of fluids and formation pressure in the injection zone.

2. This information may be obtained from geophysical logs, physical examinations of samples and cores, and chemical analysis, **[~~etc;~~]** and shall be prepared by a professional geologist registered in the state of Kentucky.

3. The owner or operator may substitute information from nearby wells if **[~~they are~~]** comparable to the injection well, and in the case of an area permit, **if** sufficient information **is available** from wells within the field to adequately describe the whole field.

Section 6. [~~7.~~] Mechanical Integrity Requirements for **[~~all~~]** Class II Injection Wells. (1)**(a) Operators [~~All operators~~]** shall demonstrate mechanical integrity of new and existing Class II injection wells.

(b) The owner or operator shall submit a plan to demonstrate mechanical integrity with the application for permit to inject.

(2) An injection well is determined to have mechanical integrity if:

(a) There are **not [~~no~~]** leaks in the casing, tubing, or packer**; and [~~, and,~~]**

(b) There is **not [~~no~~]** fluid movement into an underground source of drinking water through vertical channels adjacent to the injection well bore.

(3) One (1) of the following methods shall be used to evaluate the absence of significant leaks under subsection (2)(a) of this section:

(a) Following an initial pressure test, monitoring of the tubing and casing annulus pressure with sufficient frequency to be representative, as determined by the division, while maintaining an annulus pressure different from atmospheric pressure measured at the surface;

(b) A pressure test shall be performed with liquid or gas; or

(c) Records of monitoring demonstrating the absence of significant changes in the relationship between injection pressure and injection flow rate for the following Class II enhanced recovery wells:

1. Existing wells completed without a packer provided that a pressure test has been performed and the data is available and provided further that one (1) pressure test shall be performed at a time when the well is shut down and if the running of the test does not cause further loss of significant amounts of oil or gas; or

2. Existing wells constructed without a long string casing but with surface casing, which terminates at the base of fresh water, provided that local geological and hydrological features allow this construction and provided further that the annular space shall be visually inspected. For these wells, the division shall prescribe a monitoring program, which shall verify the absence of significant fluid movement from the injection zone into an USDW.

~~[One of the following methods shall be used to confirm the absence of leaks under paragraph (2)(a) of this section:~~

~~(a) Regular monitoring of annular pressure provided that an initial pressure test has been run; or~~

~~(b) Pressure test shall be performed with a liquid or gas; or,~~

~~(c) Records of monitoring showing the absence of change in the relationship between injection pressure and injection flow rate for Class II enhanced recovery wells.]~~

(4) One **(1)** of the following methods shall be used to confirm the absence of fluid movement under **subsection [~~paragraph~~]** (2)(b) of this section:

(a) The results of a temperature log or noise log, cement bond log; **[~~or~~]**

(b) Cementing records demonstrating the presence of adequate cement to prevent **a [~~such~~]** migration; or**[~~,~~]**

(c) **[~~Such~~]** other methods approved by the administrator.

(5)**(a)** The mechanical integrity test shall be performed on the annulus of the tubing and casing.

(b) A minimum pressure of 300 psi shall be applied to the annulus of the tubing and casing.

(c) The well is considered to have mechanical integrity if, at the end of thirty (30) minutes, there is no more than a plus or minus of three **(3)** percent **[~~(3%)~~]** change of the test pressure on the gauge.

(d) A [~~All~~] mechanical integrity **test [~~tests~~]** shall be witnessed and approved by a division field inspector

(e) The **division [~~director~~]** may require higher test pressures to be used when the anticipated injection pressure will be high.

(f) The test results shall be filed on **the Certificate of Mechanical Integrity,** Form ED-22 **[~~,incorporated herein by reference~~]**. [~~The following methods are considered sufficient to establish mechanical integrity:~~

~~(1) All permittees of new or converted Class II injection wells shall perform mechanical integrity test(s) of the installation(s) prior to injection to ensure there are not leaks in the system(s). The test pressure must exceed the maximum anticipated injection pressure by at least 100 psi.~~

~~Pressure and rate sensitive devices must be used to ensure there are no significant changes in pressure or volume of fluids injected. The test results shall be filed on forms approved by the director.]~~

(6) **(a)** [~~(2)~~] The owner or operator [~~permittee~~] of **a Class II well [~~all Class II wells~~]** [~~, both new and existing,~~] shall schedule [~~as nearly as practicable~~] at five (5) year intervals or less, mechanical integrity **tests [~~test(s)~~]** as described in subsection (5) of this section.

(b) The owner or operator shall certify the test results to the division in writing within fifteen (15) days of completion of the test.

(7)**(a)** The owner or operator shall not perform **a** mechanical integrity **test of a [~~test(s) of any~~]** Class II well without giving written notice to the division within fifteen (15) calendar days prior to the proposed test date.

(b) The division shall then notify the owner or operator of the earliest possible date available to test the well.

Section 7. Area of Review for Class II Wells. The owner or operator shall supply the following information **if [~~when~~]** applying for a permit to inject pursuant to Section 11 of this administrative regulation:

(1) A description of the area of review which shall be determined by:

(a) A fixed radius of one-fourth (1/4) mile around the injection well, **[~~;~~]** or one-fourth (1/4) mile around the permit area boundary; or

(b) The zone of endangering influence calculated in accordance with 40 C.F.R. 146.6 for an area of review less than one-fourth (1/4) mile. **[~~The use of a mathematical model will not be allowed until approval is granted by the administrator. If a request is made by the owner or operator to use a mathematical model for determining the area of review, a copy of all~~**

~~material provided to the division shall be forwarded to the administrator for review and approval, and if approval is not granted by the administrator, the method described in 1)(a) of this section shall be used.]~~

(2) [~~The owner or operator of Class II wells shall submit~~] a map showing the following information within the area of review:

(a) Existing producing wells, injection wells, abandoned wells, dry holes, and water wells;[~~:~~ ~~and~~]

(b) Surface and subsurface mines, quarries and other pertinent surface features including residences, roads, and faults; and[~~,~~]

(c) The distribution manifold applying injection fluid to all wells in the area of review, including all system monitoring points, for those injection wells, if operating from a common manifold;[~~.~~]

(3) The following data for [~~any~~] wells within the area of review [~~shall be submitted~~]:

(a) A tabulation of data, reasonably available from public records or otherwise known to the applicant, including a description of well type, construction, date drilled, location, depth, record of plugging **or** [~~and/or~~] completion, and **applicable** [~~any~~] additional information; and[~~,~~]

(b) The record of completion and plugging for each well which penetrates the injection zone, and any other wells within the area of review wells which would be affected by any proposed increase in pressure if the injection **well** [~~well(s)~~] is to be operated over the fracture pressure of the injection formation; **and** [~~.~~]

(4)**(a) For** [~~The owner or operator of any~~] wells in the area of review which are improperly sealed, completed, or abandoned, [~~shall submit~~] a corrective action plan which consists of steps

or modifications as **[~~are~~]** necessary to prevent movement of fluid into underground sources of drinking water.

(b) The division **shall [~~may~~]** consider the following criteria and factors during evaluation of the corrective action plan:

1.[~~(a)~~] Nature and volume of injected fluids;

2.[~~(b)~~] Nature of native fluids or by-products of injection;

3.[~~(c)~~] Potentially affected population;

4.[~~(d)~~] Geology;

5.[~~(e)~~] Hydrology;

6.[~~(f)~~] History of injection operations;

7.[~~(g)~~] Completion and plugging records;

8.[~~(h)~~] Plugging procedures **upon [~~at the time of~~]** abandonment; and

9.[~~(i)~~] Hydraulic connections with underground sources of drinking water.

Section 8. Financial Responsibility. (1) The owner or operator of all Class II wells shall demonstrate financial responsibility to plug and abandon **a well [~~said well(s)~~]**.

(a) Financial responsibility of existing Class II wells prior to the date of primacy shall be submitted to the division pursuant to Section 9 of this administrative regulation.

(b) The owner **or [~~of~~]** operator of **a Class II well [~~Class II wells~~]** authorized by a permit to inject pursuant to **this administrative regulation [~~these regulations~~]** shall**, upon [~~at the time of~~]** application, demonstrate financial responsibility and submit the plugging abandonment plan in accordance with 805 KAR 1:060 or 805 KAR 1:070.

(2)**(a)** The owner or operator shall provide financial coverage to adequately plug the well pursuant to the individual well bond requirements of KRS 353.590(5).

(b)1. If [~~In the event that~~] the division issues a letter of violation, forfeits the individual bond, and subsequently plugs the well, the owner or operator shall be responsible for any additional costs expended by the division for plugging the well which exceeds the bond amount.

2. These costs, if not paid, shall be recovered by civil suit pursuant to KRS 353.180(3).

3. In addition to the recovery of costs, the owner or operator shall be subject to penalties as prescribed in KRS 353.992.

Section 9. Transitional Requirements for Owner or Operators of Class II Wells.

(1)**(a)** The division shall accept **a** Class II well **permit [~~permits~~]**, including rule authorized wells, issued under the authority of the EPA administered program**. Rule authorized wells shall be deemed permitted by the division, provided the owner or operator satisfies the requirements this section.**

(b) The division shall:

1. Accept records from EPA of all authorized wells**; and [~~and shall~~]**

2. Create an inventory of approved existing wells.

(c) The financial responsibility demonstration required in Section 8 **of this administrative regulation** and the submission of the plugging and abandonment plan in Section 10 **of this administrative regulation** shall be completed within ninety (90) days following the effective date of primacy.

(d) If the existing bond posted with EPA meets the requirements of Section 8 **of this administrative regulation** and is transferable to the division, the transfer of **the [~~said~~]** bond shall be accepted by the division.

(2)**(a)** The owner or operator of **a Class II well having a mechanical integrity test [~~Class II wells having mechanical integrity test(s)~~]** approved by EPA shall remain on the same schedule of mechanical integrity tests, upon the effective date of primacy.

(b) A copy of all documents showing approval by EPA of the **well's [~~well(s)~~]** mechanical integrity**[~~,~~]** and a copy of all forms, test data, and logs required by and submitted to EPA shall be submitted to the division within ninety (90) days of the effective date of primacy.

(3) The owner or operator **with a pending application [~~of pending application(s)~~]** submitted for Class II wells under the EPA program**[~~,~~]** may transfer **a pending application [~~such pending application(s)~~]** to the division**[~~,~~]** and shall satisfy the permitting requirements in Section 11 of this administrative regulation upon the effective date of primacy.

[~~(4) The owner or operators of Class II wells which have been shut-in under approval from EPA may be allowed to keep such wells shut-in up to the time limit allowed by EPA, if a copy of EPA authorization is forwarded to the division within ninety (90) days of the effective date of primacy.~~]

Section 10. Plugging and Abandonment of Class II Wells. **(1) A Class II well [~~All Class II wells~~]** shall be plugged in accordance with 805 KAR 1:060 or 805 KAR 1:070, whichever is applicable.

(2) The owner or operator shall notify the division in writing thirty (30) days prior to plugging and shall schedule with the division inspector a time and date for performing the plugging procedure.

(3) The inspector shall schedule the earliest date available.

(4) Upon completion of the plugging, the owner or operator shall file a plugging affidavit on Form ED-38.

(5) After cessation of operations of two (2) years, the owner or operator shall plug and abandon the well in accordance with the plan, unless a notice is sent to the division describing actions or procedures that the owner or operator shall take to ensure that the well will not cause the endangerment of a USDW during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the division.

[~~The following methods may be used:~~

~~(a) Subsection (1) of this section shall suffice; or~~

~~(b) For existing Class II wells, and new wells at least five (5) years old, the applicant may, subject to approval of the director, in lieu of the test described in subsection (1) of this section file historical injection records only on an individual well basis. Said records must show weekly volume and pressure rates in tabular or graphic form that reflect rate of volume or pressure variation within the injection system for a period of five (5) years or the life of the well, whichever is shorter, and must be certified by the operator as correct and accurate.~~]

Section 11. [~~8.~~] Requirements for a Permit to Inject into [~~New~~] **A Class II Well. [~~Class II Wells. (1)~~]** All persons seeking **a permit to inject into [~~to permit~~]** a Class II well shall, after the effective date of primacy, comply with the requirements of this section.

(1) A person shall not inject fluids into [~~No person shall inject fluids to~~] the subsurface through a [~~new~~] Class II well without obtaining a permit to inject.

(2) An application **for a permit** to inject [~~This permit shall be issued under the authorization of the director. Existing wells satisfying the requirements of Section 4 of this administrative regulation shall be permitted by rule. To obtain a permit to inject, an applicant shall submit to and have approved by the director an application. The application~~] shall be submitted on form ED-14

[~~forms provided by the director~~] and shall include [~~such information as the director deems necessary for the issuance of the permit, including all of the following~~]:

(a) A statement by the **owner or** operator as to whether the well **will [~~is to~~]** be used for enhanced recovery, hydrocarbon storage, or for disposal purposes**;** **[~~.~~]**

(b) The approximate **depth [~~depth[s]~~]** of the deepest known freshwater **zone [~~zone[s]~~]**.

(c) **In accordance with 805 KAR 1:030, a [~~A~~]** location plat for a permit to inject into a Class II injection well **[~~shall be prepared in accordance with 805 KAR 1:030~~]**.

(d) An area of review map **[~~shall be~~]** prepared on a **7.5 minute quadrangle** topographic map and [~~and certified as accurate and correct by a registered Kentucky Land Surveyor. Said plat~~] **including [~~shall include the following information~~]**:

1. The location of all known freshwater wells;

2. The location and completion **or [~~and/or~~]** plugging record of all wells, whether producing or plugged;

3. The location of hazardous waste**[~~,~~]** treatment or disposal facilities;

4. The location of rivers or streams;

5.The location of quarries and surface and subsurface mines;

6. The location of faults; and

7. The location of permanent residences**; [~~.~~]**

(e) A schematic diagram of the well showing the following:

1. The total depth of the plugback of the well**; [~~.~~]**

2. The depth of the injection or disposal interval**; [~~.~~]**

3. The geological name of the injection or disposal zone**; [~~.~~]**

4. The geological name, thickness, and description of the confining zone**; [~~.~~]**

5. The vertical distance separating the uppermost extremity of the injection zone from the base of the lowest USDW; [,]

6. The depth of the top and the bottom of the casing and the cement; [,]

7. The size of the casing and tubing and the depth of the packer; **and** [,]

8. The depth to the base of the lowermost underground source of drinking water; [,]

(f) For the conversion of an existing well, a copy of the completion report and any available geophysical log of the well; [,]

(g) Proposed operating data as follows:

1. The geological name, depth, and location of the source of the injection fluid; [,]

2. A standard laboratory analysis of a representative sample of the fluid to be injected under the proposed Class II permit, [,] with the following parameters, **as contained in 40 C.F.R. 136.3 and 40 C.F.R. Part 261 Appendix III**:

a. Barium if sulfate is less than 500 mg/l;

b. Calcium;

c. Total Iron;

d. Magnesium;

e. Sodium;

f. Bicarbonate;

g. pH;

h. Specific Gravity;

i. Carbon Dioxide;

j. Total Dissolved Solids; and

k. Hydrogen Sulfide if H_2S odor is detected.

3. A material safety data sheet **for [~~shall be provided for any~~]** inhibitors **if** added to the injection fluid for control of scaling, corrosion, or bacterial growth; **[~~.~~]**

4.**a.** The nature of the annulus fluid to be used in the annulus between the tubing and casing.

b. This description **shall [~~should~~]** include the type of fluid to be used and the corrosivity of the annulus fluid.

c. The amount of inhibitor to be added shall be listed; **[~~.~~]**

5. The proposed maximum injection rate and pressure. The owner or operator shall limit injection pressure to either a value:

a. **That [~~that~~]** does not exceed a maximum injection pressure at the wellhead calculated to assure that the pressure during injection does not initiate new fractures or propagate existing fractures in the confining zone adjacent to an underground source of drinking water and will not cause the movement or injection of fluids into an underground source of drinking water; or

b. **For [~~for~~]** wellhead pressure calculated by using the following formula:

Pmax = (0.733 psi/ft - (.433 psi/ft (Sg)))d,

Where: Pmax = Maximum injection pressure (psia) at the wellhead; **[~~.~~]**

Sg = Specific gravity of the injected fluid; **and [~~.~~]**

d = Depth to the top of the injection zone in feet; **[~~.~~]**

(h) The location and description of each underground source of drinking water through which the well would penetrate; **[~~.~~]**

(i) A description of the current or proposed casing program on **the Casing and Cementing Plan for UIC Wells,** Form ED-25, including the following:

1. Casing size, weight, and type; **[~~.~~]**

2. Cement volume and type; **and [~~.~~]**

3. Packer type; [,]

(j) A description of all proposed stimulation programs; [,]

(k) A description of proposed plans to cope with all shut-ins or well failures, so as to prevent migration of fluids into any underground source of drinking water; [,]

(l) If a manifold monitoring program is utilized, **a description of the program and a demonstration [~~describe the program and demonstrate~~]** equivalence to individual well monitoring; [,]

(m) A corrective action plan, **which shall [~~must~~]** be submitted for all **wells [~~well(s)~~]** within the area of review as required in Section 7(4) of this administrative regulation;[,]

(n) A demonstration of financial responsibility as required in Section 8(2) **of this administrative regulation** and a plugging and abandonment plan as required in Section 10 of this administrative regulation; **and** [,]

(o) The plan by the **owner or** operator of mechanical integrity. Each well shall be tested for mechanical integrity using the method as described in Section 6(5) **of this administrative regulation**.

(3) [~~(2)~~] An application [~~1. All plats shall be submitted on a sheet eight and one-half (8-1/2) x fourteen (14) inches. This sheet may be on paper, tracing cloth, training paper or equivalent.~~

~~2. The names of all lessees and lessors contiguous to the tract on which the injection shall occur.~~

~~3. The Carter Coordinate Location and the elevation of the well site.~~

~~4. The geologic name and depth of the injection zone.~~

~~5. At least two (2) surface features, by bearing and distance from the proposed well site, which appear on the U.S.G.S. seven and one-half (7-1/2) minute topographic map of the area.~~

~~6. The name of said topographic map and county.~~

~~7. The location of all known freshwater wells within the area of review.~~

~~8. The location and completion and/or plugging record of all wells, whether producing or plugged, within the area of review.~~

~~(d) Information showing that injection will not initiate fractures through the overlying strata shall include, but not be limited to the following:~~

~~1. A fluid injection rate of 1,000 barrels or less for a period of twenty-four (24) hours, or an equivalent rate for any fraction of twenty-four (24) hours, must maintain a minimum separation thickness of 200 feet between the lowest base of known fresh water, and the top of the proposed injection interval per well.~~

~~2. A fluid injection rate of more than 1,000 barrels for a period of twenty-four (24) hours, or an equivalent rate for any fraction of twenty-four (24) hours, must maintain a minimum separation thickness of 500 feet between the lowest base of known fresh water, and the top of the proposed injection interval per well.~~

~~3. The director may allow lesser thickness than required in subparagraphs 1 and 2 of this paragraph if the applicant furnishes certified evidence to the director that lesser thickness will not initiate fractures into the USDW.~~

~~(e) The Well Log and Completion Report and a copy of all geophysical logs.~~

~~(f) A certificate that shall include the following:~~

~~1. The identification of the well by permit number, operator's name, lease name, well number, Carter Coordinate Location, elevation and county.~~

~~2. The entire casing and cementing record, any packers and other special downhole equipment, and cement bond logs, if run.~~

~~3. The anticipated maximum bottom hole pressure (psi) and volume in barrels or cubic feet per day.~~

~~4. The identification of the injection zone by geological name and depth (top and bottom of zone), the number of perforations, if applicable, or the interval of open hole.~~

~~5. The certification by the operator of mechanical integrity. Each well shall be tested for mechanical integrity using method(s) approved by the director prior to being placed in service and the test results shall be certified to the director in writing. The director may require less information from the applicant where the information is readily available, or from up-to-date instate files, or where, based upon demonstrable knowledge available to the director about the proposed operation, the director proposes to permit the operation without requiring corrective action or alternatives to it.~~

~~(2) Applications~~] for permit shall be signed by the owner or operator of the injection well, including corporate officers, general partners, sole proprietors, or other persons authorized to execute **[~~such~~]** documents on behalf of the applicant.

(4)[~~(3)~~] With respect to an application**, Class II Well Permit Application for Underground Injection Control, Form ED-14,** for a Class II well**, an applicant shall personally or by certified mail submit [~~an applicant must serve~~]** a written notification describing the proposed well **to [~~personally or by certified mail on~~]** each of the following persons, if the described property is located within one-quarter (1/4) mile of the proposed well:

(a) The owner or operator of each well for oil and gas purposes, including a well having temporary abandonment status under this **administrative** regulation or not yet in production**; [~~.~~]**

(b) The permittee of an underground mine permitted under KRS Chapter 350**; and [~~.~~]**

(c) Each owner of rights to surface or subsurface property that the well penetrates.

(5)(a)1.[~~(4)~~] The notification required under this subsection shall specify that a person who wishes to object to issuance of the permit **shall [~~may~~]**, within **thirty (30) [~~fifteen (15)~~]** days of receipt of the notification, submit written comments or request a hearing.

2. The notification shall include the address to which written comments or the hearing request **shall [~~must~~]** be forwarded and where additional information may be obtained.

(b)1. In addition to the notification required under this subsection, the applicant shall cause a notice of a permit application to be placed in a newspaper of general circulation in the county where the proposed well is located.

2. Individual and publication notices shall include:

a. The name and address of the applicant; **[~~,~~]**

b. The location of the proposed well; **[~~,~~]**

c. The geological name and depth of the injection zone; **[~~,~~]**

d. The maximum injection pressure; **and [~~, and~~]**

e. The maximum rate of barrels each day.

3. The notice shall specify that a person who wishes to object to issuance of the permit may, within **thirty (30) [~~fifteen (15)~~]** days of publication of the notification, submit written comments or request a hearing.

4. The notification shall include the address to which the written comments or hearing requests **shall [~~must~~]** be forwarded, how a person may receive written notice of the proceedings, and where additional information concerning the proposed permit **may [~~can~~]** be obtained.

5. Proof of service of the notification required in this subsection **shall [~~must~~]** be delivered to the division before a permit for a Class II well **shall [~~can~~]** be issued.

(6)(a)[~~(4)~~] The owner or operator shall verbally notify [~~An applicant for permit under this section shall provide public notice of the permit application by causing a notice of the application to be posted in the county courthouse of the county in which the Class II well is proposed to be located. Such notice shall describe the proposed action, and advise interested parties that additional information may be obtained from the director, that a public hearing may be requested, and that comments on the proposed action and requests for public hearing must be submitted to the director within fifteen (15) days of posting of the notice. The applicant shall provide a copy of the public notice to the director accompanied by an affidavit as to the manner in which public notice of the application was provided. If a significant degree of public interest is indicated, the director shall conduct a public hearing on the application. At the conclusion of the public comment period (including any public hearing) the director shall take final action on the permit application.~~

~~(4) The permit to inject shall be issued before injection is allowed.~~

~~(5) The permittee shall notify verbally~~] field inspectors five (5) days before all mechanical integrity tests are performed.

(b) A written notice shall be given to the division fifteen (15) [~~director five (5)~~] days before **the [~~said~~]** tests are performed as required in Section 6(7) of this administrative regulation.

(7)(a)[~~(5)~~][~~(6)~~] The permit to inject into **a [~~all~~]** Class II injection **well [~~wells~~]** shall remain valid for the life of the well or project.

(b) The [~~However, the~~] permit may be terminated if the well or project is in violation of this **administrative** regulation and applicable provisions of KRS Chapter 353 [~~the law~~].

(c) The owner or [~~well~~] operator **shall [~~must~~]** comply with the requirements of all applicable administrative regulations.

Section 12. Completion and Monitoring Reports. (1) The owner or operator shall upon completion of construction of a Class II well file with the division a [“]Certificate of Completion for an Injection Well[”], Form ED-23, **[~~incorporated herein by reference~~]** within ninety (90) days of final construction.

(2)**(a)** The owner or operator shall file an annual report of monthly monitoring of injection fluid volumes, injection pressure, and casing annulus pressure on Form ED-18, **[~~incorporated herein by reference,~~]** on the **twenty-eighth day of January for the previous twelve (12) months. [~~28th day of January for the previous 12 months.~~]**

(b) The owner or operator shall retain all **[~~such~~]** records on file for a period of five (5) years.

(c) The owner or operator of **a** liquid hydrocarbon storage or enhanced recovery **well [~~wells~~]** may monitor them by manifold monitoring on a field or project basis rather than on an individual well basis if **the facilities: [~~such facilities~~]**

1. Consist of more than one (1) injection well;**[~~,~~]**

2. Operate with a common manifold; **and [~~, and~~]**

3. Provided the owner or operator demonstrates to the director that manifold monitoring is equivalent to individual monitoring.

(3)[~~(7)~~] The owner or operator [~~permittee~~] of **a [~~all~~]** Class II injection **well [~~wells~~]** shall notify the director in writing within thirty (30) days of the termination of operations at which time the permit to inject shall expire.

Section 13. Workover of Class II Wells. **(1)** The owner or operator **shall [~~must~~]** notify the division within ninety (90) days of **a [~~any~~]** well workover, logging, or testing that may reveal downhole conditions.

(2) The owner or operator shall submit a [“]Well Rework Report[”], Form ED-4, documenting the activity within thirty (30) days following the completion of the rework.

(3) If the packer unseats [~~Should the packer unseat~~] during the workover, a mechanical integrity test shall be conducted under the provisions of Section 6 of this administrative regulation.

(4) Injection shall not be [~~No injection is~~] allowed until an approved mechanical integrity test has been performed.

Section 14. Procedures for Public Participation in Enforcement Actions. Upon receiving a complaint from the public, interested parties, or others, the division shall:

(1) Investigate and provide written response to all citizens complaints submitted **regarding [~~in regards to~~]** any concerns for **the endangerment of [~~endangering~~]** an underground source of drinking water;**[~~.~~]**

(2) Not oppose intervention by **a citizen if [~~any citizen when~~]** permissive intervention is authorized pursuant to KRS 353.180(3) ; **and [~~.~~]**

(3) Publish notice of and provide at least thirty (30) days for public comment on any proposed settlement of a division enforcement action beyond the forfeiture of a bond for a Class II well.

Section 15. Confidentiality of Information. (1) Information submitted to the division pursuant to this administrative regulation may be claimed as confidential by the submitter. A claim of confidentiality shall be asserted upon submission in the manner prescribed on the application form or instructions. Other submissions shall be stamped with the words “confidential business information” on each page containing confidential information. If a claim is not made at the time of submission, the division may make the information available to the public without further notice.

(2) Claims of confidentiality shall not apply to:

(a) The name and address of any permit applicant or permittee;

(b) Information regarding the existence, absence, or level of contaminants in drinking water; and

(c) Records directed by statute to be disclosed or published.

Section **16 [~~15~~]**. Penalties. **An [~~Any~~]** owner or operator in **violation of [~~noncompliance with~~]** the requirements of this administrative regulation **shall be [~~is~~]** subject to the penalties established in KRS 353.992.

Section **17 [~~16~~]**. Primacy. The provisions of this administrative regulation shall become effective upon the date of primacy**, on or after which a Class II well [~~. On or after said date, Class II wells~~]** shall be subject to the requirements of this administrative regulation and shall be exempt from **Sections [~~Section~~]** 4, 5, and 6 of 805 KAR 1:020.

Section **18 [~~17~~]**. Incorporation by Reference. (1) The following material is incorporated by reference:

(a) "Well Rework Report," Form ED-4, August 2007; **[~~and~~]**

(b) "Class II Well Permit Application for Underground Injection Control," Form ED-14 August 2007; **[~~and~~]**

(c) "Annual Disposal or Injection Well Monitoring Report," Form ED-18, August 2007; **[~~and~~]**

(d) "Certification of Mechanical Integrity," Form ED-22, August 2007; **[~~and~~]**

(e) "Certificate of Completion for an Injection Well," Form ED-23, October 2007; **[~~and~~]**

(f) "Casing and Cementing Plan for UIC Wells," Form ED-25, October 2007; **[~~and.~~]**

(g) "Well Transfer for UIC Wells," Form ED-26, October 2007; and

(h) "Affidavit to Time and Manner of Plugging and Filling Well," Form ED-38, October 2007.

(2) These forms may be inspected, copied, and obtained, subject to applicable copyright law, at the Division of Oil and Gas Conservation, 1025 Capital Center Drive, Frankfort, Kentucky 40601, Monday through Friday, 8 a.m. to 4:30 p.m. [~~Section 9. Date of Applicability. The provisions of this administrative regulation shall become applicable upon the date of primacy. On and after said date, Class II wells shall be subject to the requirements of this administrative regulation and shall be exempt from Sections 4, 5 and 6 of 805 KAR 1:020.~~]

In re: 805 KAR 1:110 (Pages 1-37)

1-10-08

Date

Robert D. Vance, Secretary
Environmental and Public Protection Cabinet

REGULATORY IMPACT ANALYSIS AND TIERING STATEMENT

Administrative Regulation No.: 805 KAR 1:110
Contact Person: Marvin Combs, Assistant Director

(1) Provide a brief summary of:

(a) What this administrative regulation does: This administrative regulation establishes provisions for the construction, implementation and injection of produced fluids, including gases, into underground formations for the enhanced recovery of oil and gas or for the disposal of fluids that are produced during oil and gas production operations.

(b) The necessity of this administrative regulation: This administrative regulation is necessary to implement a state program to regulate underground injection of fluids in a manner that will protect groundwater and promote the maximum recovery of oil and gas within the Commonwealth.

(c) How this administrative regulation conforms to the content of the authorizing statutes: KRS 353.592 authorizes the department to develop and promulgate a regulatory program for the purpose of accepting primary responsibility for administration of the Underground Injection Control Program under Section 1425 of the Safe Drinking Water Act (Pub.L. 93-523 as amended). This amended administrative regulation addresses the elements listed in KRS 353.592(1-5) and fulfills the intent of developing an effective regulatory Underground Injection Control Program.

(d) How this administrative regulation currently assists or will assist in the effective administration of the statutes: Compliance with the requirements of this administrative regulation will ensure the protection of underground sources of drinking water.

(2) If this is an amendment to an existing administrative regulation, provide a brief summary of:

(a) How the amendment will change this existing administrative regulation: Amended portions of this administrative regulation will address all aspects of the elements listed in the authorizing statutes enabling the implementation of an effective program that would allow state assumption of the Underground Injection Control Program from the Environmental Protection Agency.

(b) The necessity of the amendment to this administrative regulation: The existing administrative regulation was found to be deficient by the Environmental Protection Agency when the Division of Oil and Gas made an application for state primacy in

1984. The changes that are proposed in the amended administrative regulation will correct these deficiencies and fulfill the requirements for an effective state program pursuant to Section 1425 of the Safe Drinking Water Act (Public Law 93-523 as amended).

(c) How the amendment conforms to the content of the authorizing statutes: See response in question 1(c) of this Regulatory Impact Analysis. Each section of the authorizing statute under KRS 353.592 (1)-(5) is addressed in the amended administrative regulation.

(d) How the amendment will assist in the effective administration of the statutes: The changes made in the amended administrative regulation provide clarity and better define the requirements to construct, implement and inject into a Class II well. The previous administrative regulation lacked requirements for financial responsibility, transition of existing wells authorized by the Environmental Protection Agency and notice requirements necessary for an effective program.

(3) List the type and number of individuals, businesses, organizations, or state and local governments affected by this administrative regulation: The regulated entities will be oil and gas operators, with the number affected dependent on the number of companies which will develop new installation of Class II underground injection wells following the implementation of this amended administrative regulation. The Department for Natural Resources, Division of Oil & Gas Conservation will be charged with compliance oversight.

(4) Provide an analysis of how the entities identified in question (3) will be impacted by either the implementation of this administrative regulation, if new, or by the change, if it is an amendment, including:

(a) List the actions that each of the regulated entities identified in question (3) will have to take to comply with this administrative regulation or amendment: Companies will be required to apply for injection well permits with the state rather than to the Environmental Protection Agency. This will greatly benefit the oil and gas industry in the state since they are currently required to permit the wells to be drilled by the state but also are subject to permitting and additional bonding requirements with the Environmental Protection Agency. Upon receiving primacy of the Class II program, the Division of Oil & Gas Conservation will permit the wells for injection and inspect them to ensure they are in compliance with the administrative regulation.

(b) In complying with this administrative regulation or amendment, how much will it cost each of the entities identified in question (3): The proposed amendments to this administrative regulation will not result in increased costs to the regulated entities.

(c) As a result of compliance, what benefits will accrue to the entities identified in question (3): With the assumption of the Underground Injection Program, the oil

and gas operators will be required to post an individual well bond per the state schedule. State bonding costs are anticipated to be less than existing Environmental Protection Agency bonds. The inspection and enforcement personnel of the Division of Oil and Gas Conservation will be more responsive and sensitive to the regional needs of the oil and gas industry of the Commonwealth.

(5) Provide an estimate of how much it will cost the administrative body to implement this administrative regulation:

(a) Initially: $175,000 for start-up costs for vehicles, computers, other associated equipment and funding of 3 additional personnel.

(b) On a continuing basis: $175,000 annually for the administration of the program.

(6) What is the source of the funding to be used for the implementation and enforcement of this administrative regulation: Upon receiving primacy for the Underground Injection Control Program, the division will be eligible for an annual grant from the Environmental Protection Agency for the cost of administration of the program.

(7) Provide an assessment of whether an increase in fees or funding will be necessary to implement this administrative regulation, if new or by the change if it is an amendment: No increase in fees or state funding will be needed to implement this administrative regulation.

(8) State whether or not this administrative regulation established any fees or directly or indirectly increased any fees: This amended administrative regulation does not establish any fees for permits for Class II underground injection control wells.

(9) TIERING: Is tiering applied? Tiering is not applied because the requirement to permit injection wells must apply equally to all oil and gas production operations.

FISCAL NOTE ON STATE OR LOCAL GOVERNMENT

Admin. Regulation No.805 KAR 1:110 Contact Person: Marvin Combs, Assistant Director

1. Does this administrative regulation relate to any program, service, or requirements of a state or local government (including cities, counties, fire departments, or school districts)?
Yes __X___ No _____
If yes, complete questions 2-4.

2. What units, parts or divisions of state and local governments (including cities, counties, fire departments, or school districts) will be impacted by this administrative regulation? The Division of Oil and Gas Conservation of the Department for Natural Resources.

3. Identify each state and federal statute or federal regulation that requires or authorizes the action taken by the administrative regulation. As outlined in KRS 353.592 the department is authorized to develop and promulgate a regulatory program for the purpose of accepting primary responsibility for administration of the Underground Injection Control Program under Section 1425 of the Safe Drinking Water Act (Pub.L. 93-523 as amended). This amended administrative regulation addresses and fulfills the intent of developing an effective as, but no more stringent than, regulatory Underground Injection Control Program currently under the jurisdiction of the Environmental Protection Agency.

4. Estimate the effect of this administrative regulation on the expenditures and revenues of a state or local government agency (including cities, counties, fire departments, or school districts) for the first full year the administrative regulation is to be in effect.

(a) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for the first year? Revenue will not be generated from the implementation of this amended administrative regulation.

(b) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for subsequent years? Unchanged from the first year.

(c) How much will it cost to administer this program for the first year? The costs associated with attaining primacy of the Underground Injection Control Program are estimated to be $175,000. The Commonwealth of Kentucky will be eligible for an annual grant from the Environmental Protection Agency for the cost of administration of this Program.

(d) How much will it cost to administer this program for subsequent years? Costs associated with administering the Underground Injection Control Program are estimated to be $175,000 per year. The Commonwealth of Kentucky will be eligible for an annual grant from the Environmental Protection Agency for the cost of administration of this Program.

FEDERAL MANDATE ANALYSIS COMPARISON

Administrative Regulation No. 805 KAR 1:110
Agency Contact: Marvin Combs, Assistant Director

1. Federal statute or regulation constituting the federal mandate. 40 C.F.R. Parts 144 and 146

2. State Compliance Standards. KRS 353.540, KRS 353.550, KRS 353.560, and KRS 353.592.

3. Minimum or uniform standards contained in the federal mandate. 40 C.F.R. Parts 144 and 146

4. Will this administrative regulation impose stricter requirements, or additional or different responsibilities or requirements, than those required by the federal mandate? No. This administrative regulation will parallel the federal rules which govern this subject matter.

5. Justification for the imposition of the stricter standard, or additional or different responsibilities or requirements. NA